

5 We Claim:

1. In an electronic surveillance system of a type having a receiver for receiving radio frequency pulse signals and for converting said radio frequency pulse signals into digitized radio frequency pulse descriptor word data:

10 a pulse descriptor word (PDW) collector including high-speed memory and a PDW extractor circuit for collecting all digitized radio frequency pulse descriptor word data received by said electronic surveillance system and storing in said memory without interfering with the normal operations of said electronic surveillance system.

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2. In an electronic surveillance system as in claim 1, further comprising a presorter connected down-circuit of said receiver for further processing of digitized radio frequency pulse descriptor word data forwarded from the receiver;

a PDW collector as in claim 1, wherein said PDW extractor circuit is integrated into  
20 said electronic surveillance system at a point located between said receiver and said presorter; said PDW extractor capturing said data and storing it into random access memory (RAM) while simultaneously allowing said data to flow unaltered and uninterrupted through said extractor to said presorter.

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3. A pulse descriptor word collector as in Claim 1, further comprising a personal computer coupled to said PDW extractor circuit, said personal computer including

5 sequencing software to control the collecting of digitized radio frequency pulse descriptor word.

4. A pulse descriptor word collector as in Claim 1, wherein said electronic surveillance system is of a type having threat identification capabilities and said data is stored long-term in said personal computer so that said data may be played back for monitoring and assessment .

10 5. A pulse descriptor word collector as in Claim 2, wherein said collector is portable and may be removed to a laboratory setting for said play back and analysis.

15 6. A pulse descriptor word collector as in Claim 3, wherein said personal computer further comprises graphical user interface software giving the user point and click control to initiate and manage data collection.

20 7. A pulse descriptor word collector as in Claim 1, wherein said high speed memory is comprised of high speed Redundant Array of Independent Disks (RAID) hard drives.

8. A pulse descriptor word collector as in Claim 1, wherein said PDW extractor further comprises:

25 (a) input/out put connections for communication with said receiver, said presorter and said personal computer,

5 (b) timing alignment means and data flow control time coincidence for synchronizing the timing of data collection within said extractor with that of said electronic surveillance system;

10 (c) pulse descriptor word buffer for holding incoming pulse descriptor word data captured by said extractor from said electronic surveillance system until said incoming data is stable and ready to be stored by said extractor; said buffer using a first in first out control logic; said buffer also comprising a strobe for indicating that incoming data is ready to be stored;

15 (d) a random access memory (RAM) control connected to two RAM circuits; said RAM control and RAM circuits in communication with both said personal computer and said buffer; said RAM control controlled by said multi-state sequencing software of said personal computer and comprising a strobe monitor, a read/write select and a read/write control; said two RAM circuits for storing said data until it is ready to be stored by said personal computer; said two RAM circuits complimentary to each other such that when one is in a write mode, the other is in a read mode; said strobe monitor for monitoring said strobe from said buffer; said read/write control controlling a process of writing data from the buffer on one RAM while reading from the other RAM to the personal computer; said read/write select switching said RAM circuits back and forth between read and write modes; said two RAM circuits each further comprising a read counter and a write counter for monitoring the quantity of data that is being written to or read from said RAM circuits.

- 5        9. A pulse descriptor word collector as in Claim 8, wherein said multi-state sequencing software is programmed with an interrupt; said interrupt programmed to cause the read/write select within the RAM control to switch said RAM circuits from write to read and vice versa at a predetermined interval.
- 10      10. A pulse descriptor word collector as in Claim 1, for use as a referee receiver for independently verifying signals received by the host electronic surveillance system.
- 15      11. In an electronic surveillance system of a type having a receiver connected to a presorter, wherein the receiver receives radio frequency pulse signals, converts the said radio frequency pulse signals into digitized radio frequency pulse descriptor word data and then forwards said digitized radio frequency pulse descriptor word data to the presorter for further processing; a method for passively collecting all digitized radio frequency pulse descriptor word data without interfering with normal electronic surveillance system operations, said method comprising:
- 20      (a) capturing all of said pulse descriptor word data forwarded from said receiver to said presorter;
- (b) simultaneously storing said data and allowing said data to flow unaltered and uninterrupted from said receiver through to said presorter;
- (c) continuously storing said data by establishing a read/write loop using two
- 25      RAM circuits and a personal computer; said RAM circuits being complimentary to each other such that when one RAM circuit is in a read mode, the other RAM circuit is in a write mode and vice versa; said read/write

5 loop is established when captured data is written onto a RAM in the write mode, while data, previously written onto the RAM that is currently in the read mode, is read to said computer and stored into long-term digital memory, then at a predetermined interrupt the RAM circuits switch modes; said read/write loop ensuring that none of the captured data is lost.

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12. The method of Claim 11, further comprising: analyzing said collected data in a laboratory setting to monitor, assess and update the threat identification capabilities of said electronic surveillance system.